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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,137	11/04/2003	Joseph Harold Steinmetz	35022.001C2	6841
34395 7590 03/08/2007 OLYMPIC PATENT WORKS PLLC P.O. BOX 4277 SEATTLE, WA 98104			EXAMINER CHOI, WOO H	
			ART UNIT 2189	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE 3 MONTHS			MAIL DATE 03/08/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/702,137

Applicant(s)

STEINMETZ ET AL.

Examiner

Woo H. Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 4 – 6, 13, and 16 – 18 rejected under 35 U.S.C. 102(b) as being anticipated by Shinohara (US Patent No. 5,742,934).

5. With respect to claims 1 and 13, Shinohara discloses a virtual disk formatting system (figure 1) comprising:

a number of mass-storage devices (4), each having physical sectors (figure 2, 4) of a first sector length (col. 3, lines 58 – 60, physical sector length is 528 bytes); and

a routing component (3) that provides a virtual disk interface to the mass-storage devices (4) by mapping each access operation, received from an external entity, each access operation, directed to a virtual disk (1) having virtual sectors of a second sector length (col. 3, lines 60 – 62, logical blocks of size 512), to one of the number of mass-storage devices having physical sectors of the first sector length.

6. With respect to claims 4 and 16, the routing component includes a processor (figure 1, 6, col. 3, lines 39 – 55) and firmware/software programs that carry out virtual disk formatting.

7. With respect to claims 5, 6, 17 and 18, virtual sectors are mapped onto contiguous physical sectors (figure 2), **allowing** the physical sector and byte address of the first byte of a virtual sector to be calculated, when the second sector length is greater than the first sector length (there is no evidence to suggest that address calculation as claimed is prohibited in Shinohara's disclosure).

8. Claims 1, 4 – 6, 13, and 16 – 18 rejected under 35 U.S.C. 102(b) as being anticipated by Colligan (US Patent Application Publication No. 2002/0065982).

9. With respect to claims 1 and 13, Colligan discloses a virtual disk formatting system comprising (figure 1):

a number of mass-storage devices having physical sectors of a first sector length (page 5, paragraph 44, 512 bytes); and

a routing component (175) that provides a virtual disk interface to the mass-storage components by mapping access operations, received from external entities, directed to a virtual disk having virtual sectors of a second sector length (paragraph 44, 1024 bytes) to the number of mass-storage devices.

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10. With respect to claims 4 and 16, the routing component includes a processor and firmware/software programs that carry out virtual disk formatting (see paragraphs 26 and 44).

11. With respect to claims 5, 6, 17 and 18, virtual sectors are mapped onto contiguous physical sectors (paragraph 44, efficient queuing arrangement to accommodate a 1024 virtual sector with 512 physical sectors suggests contiguous physical sectors), **allowing** the physical sector and byte address of the first byte of a virtual sector to be calculated, when the second sector length is greater than the first sector length (there is no evidence to suggest that address calculation as claimed is prohibited).

12. Claims 1, 13, 7, 8, 12, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Manka (US Patent No. 5,072,378).

With respect to claims 1, 7, 12, 13 and 19, Manka discloses a virtual disk formatting system comprising:

a number of mass-storage devices having physical sectors of a first sector length (figure 10, physical sector length m); and

a routing component that provides to external entities a first virtual disk interface to the mass-storage components by mapping access operations, received from the external entities, directed to the first virtual disk interface having virtual sectors of a second sector length (col. 3, lines 3 – 11, virtual record length, virtual record is the basic unit of storage in the virtual disk storage system, see also figure 9, virtual track format, and col. 18, lines 52 – 54) to an internal,

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virtual disk interface with internal-virtual-disk-sectors having a third sector length larger than the second sector length (figure 10, logical sector length $m+n$), and then mapping the access operations from the internal, virtual disk interface to the number of mass-storage devices.

13. With respect to claims 8, 9 and 20, see figure 9, see cyclic check field. See also abstract.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2, 3, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colligan in view of Sanada et al (US Patent Application Publication No. 2002/0083285, hereinafter "Sanada").

Colligan discloses all of the limitations of the parent claims as discussed above. Colligan also discloses ATA disk drives (paragraph 6). However, Colligan does not specifically disclose fibre channel disk based access. On the other hand, Sanada discloses fibre channel storage controller that routes storage traffic among multiple hosts and a storage system (figure 1). It would have been obvious to one of ordinary skill in the art, having the teachings of Colligan and Sanada before him at the time the invention was made, to adapt Colligan's storage system for use

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in a network environment as taught by Sanada, in order to be able to share the storage system among multiple hosts with access security.

16. Claims 2, 3, 10, 11, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manka in view of Sanada and further in view of Suruguchi (US Patent No. 6,928,509).

Manka discloses all of the limitations of the parent claims. However, Manka does not specifically disclose fibre channel disk based access. On the other hand, Sanada discloses fibre channel storage controller that routes storage traffic among multiple hosts and a storage system (figure 1). It would have been obvious to one of ordinary skill in the art, having the teachings of Manka and Sanada before him at the time the invention was made, to adapt Manka's storage system for use in a network environment as taught by Sanada, in order to be able to share the storage system among multiple hosts with access security.

While Manka and Sanada disclose all of the limitations discussed above, they do not disclose ATA disks. On the other hand, Suruguchi teaches that S-ATA provides great value for servers and RAID application because of cost advantages and the ability to hot plug devices (col. 1, lines 50 – 54). It would have been obvious to one of ordinary skill in the art, having the teachings of Manka, Sanada and Suruguchi before him at the time the invention was made, to use S-ATA disks in the system of Manka and Sanada, in order to take advantage of benefits mentioned above.

Response to Arguments

18. Applicant's arguments filed December 4, 2006, have been fully considered but they are not persuasive. While Applicant's detailed discussion of hard disk sector structures are informative, Applicant has not limited the claims to magnetic hard disks with concentric tracks shown in figure 1 contained in Applicant's response dated 12/04/2006. As clearly evident from the Shinohara reference, the term "sector" is used in mass-storage devices other than magnetic hard disks with concentric tracks. Moreover, whether the term "sector size" refers to data payload size, as Applicant contends, is questionable as Applicant made no attempt to provide support for this contention from the specification. As far as the Examiner can discern, it is ambiguous at best as to whether the term "sector size" only refer to the size of the data payload contained in a sector or include other overhead and control information. On the other hand, Applicant can easily avoid this ambiguity by explicitly making it clear in the claims. While claims are interpreted in light of the specification, limitations are not imported from the specification. In this case, even the specification does not make it clear as to what information is included or excluded in determining the sector size or length.

19. As to the meaning of the term "routing component", Applicant's attempt to convince the Examiner to interpret the claims with limitations that are not present in the claims is not successful. The Examiner notes that the term "routing component" is not a term that is customarily used in the art of storage devices. Therefore, the term is given a reasonable meaning according the ordinary meanings of the two constituent words. The ordinary meaning of the term "routing component" is simply a "component" that is associated with "routing." According

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to Merriam Webster's Collegiate Dictionary, 10th Edition, "routing" means 1) to send via a selected route, or 2) to divert in a specified direction. The "components" identified in the rejections are associated with sending or diverting requests and data via a selected route or in a specified direction (to and from the mass storage components). Contrary to Applicant's allegation that the Examiner assigned an arbitrary meaning to the claimed term, the Examiner gave full weight to the ordinary meaning of the term "routing component." Again, if Applicant wishes to assign the claimed term a specific meaning that is narrower than the ordinary meaning that the Examiner used to interpret the claims for examination, Applicant can do so easily by specifically limiting the term to the specific meaning that Applicant wishes to assign.


20. As Applicant's arguments regarding the prior art of record rely entirely on the faulty assumption that the claimed terms "sector length" and "routing component" should only be interpreted, for examination, according to Applicant's own meanings presented in the Remark section of Applicant's response date December 4, 2006, they are not persuasive. Applicant's own meaning that is more specific than an ordinary meaning prevails, during examination, only if Applicant acted as his/her own lexicographer by specifically and unambiguously defining it in the specification. In this case, Applicant presented no evidence that Applicant acted as his/her own lexicographer. During examination, claims are interpreted giving the claimed limitations their broadest reasonable interpretation in view of the specification.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Woo H. Choi whose telephone number is (571) 272-4179. The examiner can normally be reached on M-F, 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald Bragdon can be reached on (571) 272-4204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Woo H. Choi
March 5, 2007